Health IT: The Linchpin of Future Health Care Reform

An Executive Summary
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Two significant issues with harnessing information technology for better health care remain a challenge. These are:

- the need to provide a modern communication infrastructure to replace the non-communication that is inherent in the present paper-based/siloed electronic amalgam of health records

- the need to create a unique and *comprehensive single* record in real time for each patient to support clinical decisions, care management, and quality measurement/ improvement

These goals are hard to achieve and do not automatically flow from the deployment of electronic health records (EHRs), even when technical interoperability exists and "health information exchanges" are created. Current initiatives can create electronic records, but they often result in separate and provider- or payer-centric records on patients scattered across entities, requiring additional work to add another layer to pull them all together. Even then yet another function is needed to create the value everyone seeks.

There is no real need to put an EHR in every provider and spend the money to connect them all. The desired result can be achieved using a different architecture, with a focus on the patient.

The approach we've deployed in Dayton – patient-centric individual health records (IHR) combined with a set of capabilities that supports patients, physicians, payers and administrators, and researchers simultaneously – shows a significant positive impact from health IT. The results in actual use, not as a test or a demonstration or a trial, show that the Individual Health Record:

- Is easier, faster, and cheaper to deploy

- Provides a superior foundation for care, and

- Provides a superior foundation for saving money.

This approach works with existing electronic records systems, but for use by the patient and clinicians who are using the IHR as their EMR, it only requires an Internet connection.

THE APPROACH

The US health care system is costly, provides less-than-desired quality care, and is often unsafe. The CEO of the Medical Records Institute said, "For 25 years, electronic medical records (EMRs) have been our number one priority on which billions of dollars have been spent, yet virtually no one uses them. Perhaps we are doing the wrong thing". Why are conventional EMRs the wrong thing? Because they rely on an archaic communication infrastructure and do not create a single understanding of a patient – a shared "single truth".

Communication

Quality health care is dependent primarily on having accurate and complete information about each patient at the time of decision or action – by the patient, caregiver, payer or researcher. We must refocus resources to engineer an information system that can create a comprehensive picture of individual patients for all appropriate users from data that may be found in a wide variety of places. It must be a single record, unique to that patient, and the same record every time it is viewed. Once data are pulled from disparate sources into such a real-time structured record, communication among patient and caregivers is created automatically where it did not exist before. This is because simply by viewing the record, a physician is viewing all the relevant data about that patient from each health care provider and payer connected to that patient, without the need to have a connection to each.

The data content must be understood. Then the technology can apply evidence-based quality rules, care management protocols, and business or other administrative rules in a manner unique to each patient. Importantly, the technology can apply the privacy and security policies desired by patients to their individual records. Only then is there a comprehensive record of each patient and his or her care environment that is of great value to both the patient and all relevant providers of care.

What is really needed is a communication infrastructure or platform that allows *every physician* or other provider involved in the care of a patient *and the patient himself or herself* to make ideal care management decisions from a cost, quality, and safety perspective. Ideal management decisions can only be made if every caregiver in the care delivery process has all of the relevant information (synthesized and understood) about the patient at the time of their interaction. This does not usually happen even with the most sophisticated EHRs except in special circumstances (such as an integrated delivery system where all the patient's caregivers are part of the health delivery system).

Ideal care management decisions also require caregivers to *communicate with each other* efficiently, effectively, and immediately. Most importantly, the patient must be included in these communications with all of their caregivers – often half a dozen physicians, pharmacists, and health coaches for a mostly "well" patient and far more for one with a chronic disease.

Current health IT systems generally can provide a comprehensive patient record on the care that patient gets in a single provider's office, within a health system, or when services are paid by the same plan, depending on who invested in the system. But EMRs do not connect to the hundreds or thousands of individual data sources in a particular region in order for the necessary complete patient record to be generated. Thus, most

current sophisticated EHR products remain siloed even in integrated delivery systems, because they cannot "talk" to each other.

The current "popular" approach to this problem is called "interoperability". It assumes all EMRs will plug into a regional network to obtain patient information from each provider's EMR to be displayed to the end user. Even if gathered from multiple sources, this solution is still at best only a bucket-full of data of all types. No real picture of the patient and his/her care environment – including status relative to best care practices – is created. In other words, the new system still does not transform the data into useful information or operate to provide the additional information necessary to secure the maximum value from that data. (See the National Research Council Report quote below.) In contrast, a comprehensive patient-centric record provides a platform for the communication and range of operations on which the transformation of the health care delivery systems depends.

Records that are Synthesized and Understood

The National Research Council report of January 9, 2009, states "…current efforts aimed at the nationwide deployment of health care IT will not be sufficient to achieve the vision of 21st century health care, *and may even set back the cause if these efforts continue wholly without change from their present course*. Specifically, success in this regard will require *greater emphasis on providing cognitive support for health care providers and for patients and family caregivers* on the part of computer science and health/biomedical informatics researchers…. This point is the central conclusion of this report." P. S-2, emphasis added.

The patient record must be more than just data. The data content must be understood by the underlying technology. We must require that the system create a single, comprehensive record for each patient using an ontology that makes it possible to have the best clinical decision support and evidence-based care. It's that extra capability that assures the outcomes everyone seeks. Then the technology can apply evidence-based quality rules, care management protocols, and business or other administrative rules in a manner unique to each patient. Only then does one have a comprehensive record of each patient and his or her care environment that is of great value to both the patient and all relevant providers of care. The technology can also apply the privacy and security policies desired by patients to their individual records.

PRELIMINARY RESULTS FROM "COGNITIVE SUPPORT"

In Dayton, we see:

- Significant utilization of the electronic record by patients with chronic conditions
- Changes in service utilization – from acute, in-hospital care toward more effective outpatient and physician care with significant reductions in cost trends
- Significant improvement in generally accepted quality metrics for preventive care

Keys to success in Dayton:

- patient-centric architecture, not centered on the provider or payer's system
    - works on behalf of the patient, not a single sector of the industry
    - supports patient's behavioral change – essential to chronic care management
    - when deployed, instantly creates the communication among clinicians that is so much work under the RHIO model – addresses the problem of numerous incomplete health records on the patient under a EHR/RHIO structure
    - facilitates negotiation with key national data sources; uses market power of custodian and can create "neutral" site for received data to be housed.
- "smart" component – "cognitive support": use of the ontology to
    - create accurate, real-time record
    - support evidence-based medicine/ CDS
    - administer P4P and other quality programs
- value created by making the patient desirable to the provider and to the payer – working with the market instincts of stakeholders and obviating the need to get them all around the table to agree on something with no demonstrated value

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